

NEW SUBSPECIES AND NOTES ON DONACIA WITH KEY
TO THE SPECIES OF THE PACIFIC STATES

(Coleoptera, Chrysomelidæ)

BY ALBERT R. MEAD

*University of California, Berkeley, California****Donacia subtilis magistrigata* Mead, new subspecies**

Strongly dorso-ventrally flattened, subparallel, elongate, shining cupreous; antennæ, head, and legs concolorous and pubescent.

Male. Head slightly constricted behind eyes, finely punctate with a deep median sulcus; eyes large and only moderately prominent; antennæ extending to basal one-third of elytra. Pronotum at apex about as wide as long, converging to posterior angles which are feeble; anterior angles distinct but not prominent; lateral tubercles depressed and indistinct; disc densely and coarsely punctate-rugose. Elytra heavily strigate, the strigæ becoming more dense toward apices which are truncate; a limited smooth area approximate to scutellum; punctuation rather coarse becoming finer at apices; anterior impressions feeble, posterior impressions faint; coarse transverse rugæ sparse, but fairly abundant in region of anterior impressions. Venter finely punctate with pubescence white and moderately dense; prosternal episterna with anterio-dorsal area pubescent, posterior portion glabrous and coarsely strigate. Metathoracic femur reaching to apex of third sternite; moderately clavate with a small acute tooth. Last abdominal tergite truncate; last sternite with an apical depression. Length 8.5 mm., breadth 3.0 mm.

Female. Larger and stouter than the male; antennæ slightly shorter and stouter. Last abdominal tergite feebly emarginate; last sternite sub-angulate at apex. Length 11.0 mm., breadth 3.5 mm.

Holotype, male (No. 4689 Cal. Acad. Sci.), allotype, female (No. 4690 Cal. Acad. Sci.), and two paratypes collected at Clarksburg, Yolo County, California. The holotype and the two paratypes were collected by A. T. McClay on June 4, 1931; the allotype was collected by Mont A. Cazier on July 26, 1933; seven other paratypes were collected at Tejon Canyon (Kern Co.), Sebastopol (Sonoma Co.), Davis (Yolo Co.), Alturas (Modoc Co.), and Lakeport (Lake Co.), California. Four paratypes are deposited in the collection of the author, three in the collection of

A. T. McClay, and one paratype each in the collections of L. J. Muchmore (Los Angeles Museum), and B. E. White.

Donacia subtilis magistrigata might be confused with *distincta* LeConte or *distincta occidentalis*, the species described below, because of the densely strigate elytra, but can be distinguished in that the head is only slightly narrowed behind the eyes, the median line of the pronotum is usually absent, and there are transverse rugæ on the elytral disc. This subspecies can readily be distinguished from the typical *subtilis* Kunze by the fine and dense strigate-rugose sculpturing on the elytra, by the meta-thoracic femora which are less clavate; and by the antennæ which are stouter. The last abdominal tergite of the female is feebly emarginate while that of *subtilis* is broadly rounded.

Charles Schaeffer reports in his revision¹ that H. F. Wickham collected *subtilis* as far west as Greeley, Colorado, and S. Beller and M. H. Hatch report² that it has been found in Seattle, Washington; but they do not list it for Oregon³. This is undoubtedly the first record for California. Mr. Hatch sent to the writer the three specimens of *subtilis* which were collected in Seattle, Washington; but on examination only one, a male, showed an affinity toward the new subspecies. The distinguishing characters were intermediate in this specimen and therefore not typical. Thus *magistrigata* seems to be limited to California.

Donacia distincta occidentalis Mead, new subspecies

Feebly depressed, elongate, dull metallic cupreous, antennæ black, legs concolorous; head, antennæ, legs, and venter punctate, pubescent.

Male. Head small, rather strongly constricted behind eyes; punctuation moderately dense becoming finer and more dense posteriorly; eyes small and prominent; median sulcus narrow and deep; antennæ about half the length of the body. Pronotum a little wider at apex than long, converging slightly to a well defined posterior marginal carina which is produced laterally to form the feeble posterior angles; anterior angles oblique and only slightly distinct; lateral tubercles well defined and separated from the disc by a moderately deep arcuate groove; lateral margin sinuate posterior to tubercle; median line distinct; punctuation coarse and sparse

¹ Bkln. Mus. Sci. Bull., III, 1925, pg. 106.

² Univ. Wash. Publ. Biol., I, 1932, pg. 82.

³ Pan-Pac. Ent., VIII, 1932, pp. 102-108.

with few intermittent fine punctures; disc comparatively smooth becoming densely rugose laterally; tubercles rugose. Elytra elongate; apices truncate; surface very finely and evenly strigate becoming uniformly more dense at apices; a small area in the basosutural region smooth and shining; punctuation moderately fine becoming finer at apices; anterior impressions distinct, arcuately produced anteriorly to humeri; posterior impressions equally distinct, produced posteriorly, two intervals wide, almost to apices. Venter finely and densely punctulate; pubescence fine and moderately dense; only antero-dorsal one-fourth of prosternal episternum pubescent, remaining portion glabrous and coarsely strigate. Metathoracic femur reaching to apex of third sternite; clavate, with a small and obscure tooth. Last abdominal tergite broadly emarginate; last sternite apically depressed. Length 7.5 mm., breadth 2.5 mm.

Female. Larger and stouter than male; pronotum slightly wider; antennæ shorter and stouter. Last abdominal tergite narrowly emarginate; last sternite broadly rounded. Length 9.0 mm., breadth 3.5 mm.

Holotype, male (No. 4691, Cal. Acad. Sci.), allotype, female (No. 4692, Cal. Acad. Sci.), and eight paratypes all collected by A. T. McClay in Luther's Pass, near Meyers, El Dorado Co., California, on June 15, 1930. Five paratypes (4♂, 1♀) are in the collection of A. T. McClay and three (2♂, 1♀) have been deposited in the author's collection. Two other specimens are at hand one of which was collected at Pothole meadows, Yosemite, California, on June 2, 1932, and the other at Facht, Lassen County, California, on June 5, 1921; but these are not typical as will be pointed out later.

Donacia distincta occidentalis can be distinguished from *subtilis magistrigata* Mead and allied to *distincta* LeConte by the following characters: the head is smaller and more strongly constricted behind the eyes, the eyes are smaller, the median line of the pronotum is always present, the prothorax is wider, the strigate sculpturing of the elytra is much finer, and transverse rugæ on the elytral discs are absent. This subspecies, however, differs from the typical *distincta* in that it is smaller, more slender, and more convex; the antennæ are shorter and stouter; the eyes are less prominent; the metathoracic femur is only slightly clavate and has a small and obscure tooth whereas that of *distincta* is more strongly clavate with a moderately large and acute tooth; and the apical third of the elytra as seen from a lateral

view is not depressed as in *distincta* but curved ventrad as in *tuberculifrons* Schffr.

Typical *distincta* has not been reported west of Edmonton, Alberta⁴, but there is a single specimen in the author's collection from Cranbrook, B. C., which with the two atypical specimens previously mentioned make a series that connects the typical *distincta* of the Great Lakes Region with the subspecies *occidentalis* in California. This series shows a degree of variation between each specimen which is almost correlated with the distribution. This is particularly noticeable in the size and shape of the insect, the type of pronotum, and in the armature of the metathoracic femur. The specimen collected in Yosemite is more depressed as in *distincta* but the size and pronotum are similar to *occidentalis*, whereas the armature of the femora is exactly intermediate. However, the specimen collected at Facht is more nearly like *occidentalis* in that the only atypical structure is the pronotum which is more nearly like *distincta*. The type series of ten shows a remarkable constancy in all structures especially in the presence of the definite basal carina of the pronotum and the obscure tooth of the metathoracic femur. A larger series of these two atypical forms may prove this subspecies to be more variable than the type series indicates.

DONACIA EMARGINATA PACIFICA Schffr.

Schaeffer described, in his revision, a subspecies of *emarginata* from California which he called *pacifica*, and according to the localities cited in this revision, this subspecies is limited to California. He observed specimens from Oregon and Washington; but these were identified as true *emarginata*. It is the opinion of the writer that Schaeffer had access to a too limited amount of California material and described this subspecies on the differences present in the series which he had, which differences become less significant as a larger series is examined. The distinguishing characters that he used are so variable that at most this can only be considered a phase of *emarginata* and should not have any taxonomic standing. It is for this reason that *pacifica* has not been included in the key.

⁴ Bkln. Mus. Sci. Bull., III, 1925, pg. 103.

DONACIA GERMARI FLAVIPENNIS Mannerheim

On October 15, 1934, J. T. Howell and L. S. Rose collected a large series of *germari* between Siltcoos Lake and Florence Lake in Lane County, Oregon. This series, which has been deposited in the collection of the California Academy of Sciences, shows all gradations from the typical metallic *germari* to the entirely flavous form. According to Schaeffer, LeConte had two specimens of typical *germari* and two of *flavipennis* which were presented to him by Mannerheim, all four of which were collected in the same place, viz., Sitka, Alaska. It seems quite obvious on the basis of this evidence that *flavipennis* can no longer stand as a valid subspecies and must be considered as a color phase which is found in north-western populations of *germari*. To be sure, Schaeffer restored *flavipennis* as a "Western color variety of *germari*"; but he used the term "variety" for all subspecies which he described and it does not seem reasonable to believe that he intended any exception here. Further, it is listed in Leng's catalogue as a subspecies and should thus be corrected. Flavous forms appear frequently in a number of species of *Donacia*, s. str., for example *hirticollis*, *piscatrix*, *palmata*, *cincticornis*, etc., and it does not necessarily follow that merely because flavous forms are found in no other species of *Plateumaris*, that this particular one should receive subspecific standing.

DONACIA FULVIPES Lacordaire

It is quite difficult to distinguish *fulvipes* from *wallisi* Schffr. if only one of the species is at hand; but an examination of a large series of these two confusing species has shown that the metathoracic femur of *fulvipes* is like that of *pusilla* in shape and is definitely bicolored whereas the metathoracic femur of *wallisi* is more nearly like that of *germari* since it is almost as wide at the base as at apex, and is entirely rufous. The antennæ of *wallisi* are bicolored and distinctly annulate while those of *fulvipes* are entirely metallic except for the outer three to five segments which are rufous. There is also considerable difference in the shape of the upper and lower vaginal plates and the last abdominal tergite in the females of the two species as illustrated in the accompanying figures.

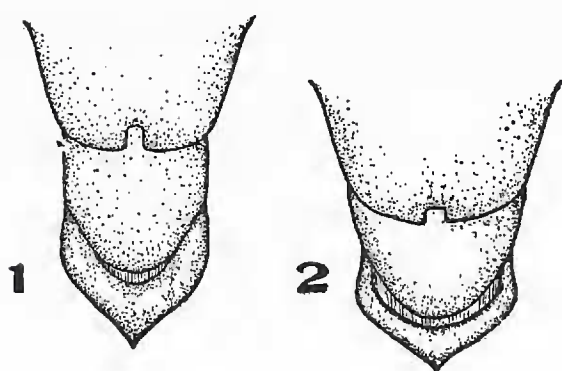


Figure 1, *fulvipes*; figure 2, *wallisi*.

KEY TO THE SPECIES OF DONACIA OF THE PACIFIC STATES

1. Sutural bead of elytra approximate to sutural margin throughout entire length.....subg. DONACIA 2
- Sutural bead and sutural margin of elytra divergent at apical sixth.....subg. PLATEUMARIS 9
2. Entire dorsum pubescent, elytral epiplura not limited dorsally by an elevated ridge.....*pubescens* Lec.
- Elytra glabrous, epiplura limited dorsally by a distinct elevated ridge.....3
3. Pronotum finely pubescent.....*hirticollis* Kirby
- Pronotum glabrous.....4
4. Metathoracic femora extending to elytral apices, pronotal punctuation fine and sparse.....5
- Metathoracic femora never extending to elytral apices, pronotal punctuation coarse.....6
5. Dorsum metallic blue, strial punctuation moderately coarse, punctures often greenish, median basal triangulate excavation usually indistinct.....*proxima* Kirby
- Dorsum metallic green and/or cupreous, strial punctuation coarse, basal triangulate excavation deep.....*proxima californica* Lec.
6. Elytra with transverse rugæ, median line of pronotum usually absent, head only slightly constricted behind eyes, eyes large and moderately prominent.....7
- Elytra without transverse rugæ, median line of pronotum always present, head strongly constricted behind eyes, eyes small and prominent.....8
7. Abundant coarse transverse rugæ on elytra, antennæ slender, metathoracic femora clavate.....*subtilis* Kunze
- Fine and dense strigate-rugous sculpturing on elytra, coarse transverse rugæ sparse, antennæ stouter, metathoracic femora less clavate.....*subtilis magistrigata* Mead

8. Metathoracic femur clavate with a moderately large and acute tooth, apical third of elytra depressed.....*distincta* Lec.
- Metathoracic femur less clavate with a very small obscure tooth, apical third of elytra curved ventrad.....
.....*distincta occidentalis* Mead
9. Metathoracic femora entirely metallic, last abdominal tergite deeply emarginate.....*emarginata* Kirby
- Metathoracic femora bicolored or entirely rufous; or if metallic, the last abdominal tergite truncate.....10
10. Prosternal episterna coarsely strigate.....11
- Prosternal episterna punctate rugose or at most only posterior half finely strigate.....13
11. Prothorax longer than wide, usually much more so, median line usually present, rarely a sulcus, prothoracic tubercles elongate, metathoracic femora distinctly bicolored.....
.....*longicollis* Schffr.
- Prothorax subquadrate with a deep median sulcus, prothoracic tubercles not elongate, metathoracic femora largely metallic with the small rufous area at base often faint.....12
12. Antennæ metallic, pronotal sub-basal transverse impression deep, median line produced as a carina posterior to the transverse impression, metathoracic femora clavate.....*idola* Hatch
- Antennæ bicolored, pronotal sub-basal transverse impression distinct but not deep, sub-basal carina absent, metathoracic femora incrassate.....*dubia* Schffr.
13. Second and third segments of antennæ small equal or subequal, pronotum densely and coarsely punctate, metathoracic femur smaller at base than at apex.....*pusilla pyritosa* Lec.
- Third antennal segment a third longer than second and equal or subequal to fourth, pronotum alutaceous and usually finely punctate, metathoracic femur as wide or wider at base than at apex.....*germari* Mann.

Following is a list of the species of *Donacia* found in each of the three Pacific states:

CALIFORNIA: *hirticollis*, *pubescens*, *proxima californica*, *subtilis magistrigata*, *distincta occidentalis*, *emarginata*, *germari*, *pusilla pyritosa*, *longicollis*.

OREGON: *hirticollis*, *pubescens*, *proxima californica*, *emarginata*, *germari*, *pusilla pyritosa*, *longicollis*.

WASHINGTON: *hirticollis*, *pubescens*, *proxima*, *proxima californica*, *subtilis*, *emarginata*, *germari*, *pusilla pyritosa*, *longicollis*, *dubia*, *idola*.

The writer wishes to extend most sincere thanks to E. C. Van Dyke for his untiring efforts to assist in the preparation of this paper, to C. A. Frost and M. H. Hatch who so willingly loaned specimens upon request, and to A. T. McClay who so generously supplied the greater share of the type material. The Charles W. Leng collection of Chrysomelidæ, purchased by the writer in 1936, formed the basis for this paper.

NOTE ON THE BLATTARIAE OR COCKROACHES OF WESTERN WASHINGTON

The only species native to western Washington appears to be *Cryptocercus punctulatus* Scudder, which Hebard (Mem. Amer. Ent. Soc. No. 2, 1917, p. 258) records from Chehalis. I have seen no specimens from the state, but have taken a nice series under bark of logs in Oregon Caves National Monument in southwestern Oregon.

Three introduced species occur: *Blatella germanica* L. (the common cockroach or croton bug) common in the biological laboratory building at the University of Washington in Seattle and elsewhere, *Periplaneta americana* L. (the American cockroach) occasionally taken in hotel basements and in restaurants in Seattle, and *Blatta orientalis* L. (the oriental, black, or Asiatic cockroach) recently taken in an apartment in Kent.

Finally, there are two adventitious species occasionally reported from bananas in Seattle: *Panchlora cubensis* Scudder* (the green Cuban roach) and *Nyctibora noctivaga* Rhen (the great brown roach).

All but the last of these species can be recognized on the basis of the material given in Essig's *Insects of Western North America* 1926, pp. 103-106, and all are described in Blatchley's *Orthoptera of north-eastern America* 1920 pp. 59-114.—Melville H. Hatch, University of Washington.

*Hebard, *ibid* p. 270, records this species from Bremerton.